

**U. S. Department of Energy**

**Albuquerque Operations Office  
Technical Qualification Program  
Phase I Self Assessment**



**Qualification and Training Division**

**Rev 0**

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## Section 1.0 Executive Summary

The Albuquerque Operations Office (AL) Phase I self assessment of the Technical Qualification Program (TQP) was conducted from August of 1997 through January of 1998. This report outlines the findings of that assessment and is a deliverable under the commitments of the revised 93-3 Implementation Plan.

The purpose of the assessment was to determine the extent to which the current AL-TQP was meeting the intent of the original 93-3 Implementation Plan issued in November of 1993, and the elements noted in the revised draft 93-3 Implementation Plan dated February 27, 1998. A multi-faceted approach was applied for the assessment which utilized the expertise of several groups. These included the AL-Qualification and Training Division (QTD), the organization responsible for TQP administration at AL, the AL-TQP Recast Working Group, a team composed of TQP stakeholders from various technical organizations within AL, and a TQP Peer Review Team, a team of assessors from other Departmental TQP programs. The self assessment was developed under the direction and guidance of the AL Assistant Manager for Management and Administration, and the AL representative to Federal Technical Capability Panel.

The assessment identified areas in which the current AL-TQP has met the intent of the original 93-3 Implementation Plan. The following are current program strengths:

- Effective program administration and qualification record control.
- Program implementation complete and requirements of DOE Order 360.1 satisfied.
- TQP needs are used as an input for the Individual Development Plans (IDP).
- Utilization of alternative developmental activities for TQP completion.

The assessment also identified deficiencies associated with the current AL-TQP which hindered the program's effectiveness in meeting the intent of the original 93-3 Implementation Plan. Those issues include:

- Lack of ownership by senior/line management and participants in the program.
- Systematic Approach to Training was not adequately followed during implementation of the current program.
- Insufficient or inappropriate qualification standards.
- Less than adequate discipline in the participant evaluation process.
- Lack of certification reciprocity by the current program.
- Non-value added paperwork exists within the current program.
- Ineffective communication.
- Insufficient Human Resources integration into the qualification process.
- Exclusive focus on defense nuclear facilities resulted in less than adequate attention to other important safety and programmatic capabilities.

Redesign of the current program to address its weaknesses while preserving its strengths is recommended. A plan addressing each of the issues identified by this assessment will be developed by AL-TQP stakeholders.

## **Section 2.0 Introduction**

The purpose of this document is to report the strengths and weaknesses identified during the self assessment of the Albuquerque Operations Office (AL) Technical Qualification Program (TQP). This self assessment report is a deliverable under commitment 5.4.2 of the revised draft 93-3 Implementation Plan, dated February 27, 1998.

The TQP was established in response to a DNFSB observation that the level of federal scientific and technical expertise to effectively accomplish DOE's safety responsibilities at defense nuclear facilities was declining. DNFSB Recommendation 93-3 was issued on June 1, 1993, and subsequently accepted by the DOE on July 23, 1993. The recommendation discussed the need to improve the technical capability of federal employees associated with the operation of defense nuclear facilities.

The initiatives and commitments contained in the Recommendation 93-3 Implementation Plan (The Plan) issued by the Department on November 3, 1993, represented a significant and fundamental change in the training and qualification programs within DOE. The Department recognized that ensuring the technical competence of the federal technical workforce is an essential component of a sound safety program. The DNFSB in its three annual reports prior to the issuance of 93-3 had observed that:

“...the most important and far reaching problem affecting the safety of DOE defense nuclear facilities is the difficulty in attracting and retaining personnel who are qualified by technical education and experience to provide the kind of management, direction and guidance essential to safe operations of DOE's defense nuclear facilities.”

The original approach of the Plan was to take a broad view of this concern which included, recruitment and retention, education, professional development activities, performance appraisal, and ongoing internal and external evaluations.

With the TQP over four years into implementation, the Department has made progress on several aspects of the original Plan, but has not yet achieved all of the improvements outlined in the Plan. In an April 2, 1997, letter to the Secretary, the DNFSB noted that approximately 40 percent of the Plan's commitments had not been met or had not achieved the desired effect. The DNFSB also recognized that many of the original commitments required revision in order to reflect other changes that occurred over the last four years and requested that the Department revise the Plan. In response to the DNFSB's concerns, the Secretary recommitted the Department to improve federal technical capabilities, and established the Recommendation 93-3 Recast Working Group to revise the Plan. This group was subsequently designated as the Federal Technical Capability Panel and is comprised of senior DOE managers committed to the success of the TQP.

The Department developed a revised 93-3 Implementation Plan which addressed the DNFSB's concerns. One of the issues covered in the revised plan is the establishment of TQP objectives which are to be met by each Operations and Program Office. These objectives are general in nature and the goal is for the Department to implement a flexible process, based on uniform principles, to appropriately enhance the technical capabilities of the federal workforce. Evaluation of the current program is one of the first commitments outlined in these objectives, and this report details the results of AL's assessment.

### Section 3.0 Scope and Methodology

Under the revised 93-3 Implementation Plan, each Program or Operations office responsible for defense nuclear facilities, is required to complete a Phase I self assessment. The AL-TQP includes participants from three Area Offices and over a dozen technical support organizations. The program is administered at AL by the Qualification and Training Division (QTD) which has two federal positions responsible for the TQP.

The following elements were highlighted by the revised Implementation Plan as questions the self assessment should address:

- a. Are the Technical Qualification Program principles embodied in the office's program?
- b. Are the roles and responsibilities defined?
- c. Does the program require a rigorous job and task analysis to be performed for each identified position?
- d. Are related knowledge, skill, and ability elements defined?
- e. Is an assessment system in place that measures the technical competency of personnel?
- f. Are there feedback mechanisms included in the program?
- g. Does the program meet the office's mission needs?
- h. Are the appropriate positions included in the program?
- i. Has the technical competency of personnel been upgraded?
- j. Is the level of technical competency of personnel who have completed the program adequate and appropriate?
- k. Do the office programs identify job-specific requirements that focus on rules, regulations, codes, standards, and guides necessary to carry out the office's mission needs?
- l. Are the office-specific programs consistent with the office's roles and responsibilities?
- m. Have the office-specific programs verified the adequacy of each individual's experience and relevant experience?
- n. Does the Program provide for continuing training?

By addressing each of the above elements the assessment identified several issues associated with the current program. These issues will be detailed in sections 4 and 5.

The self assessment was conducted using three related reviews:

1. External review of the program by a team from other TQP sites.

A review team from peer TQP programs performed an analysis of AL's TQP. The team lead by Paul Hartmann of the Rocky Flats Field Office included David Roth of Defense Programs, George Cannode and Dennis Oba also of Rocky Flats. The Peer Review was conducted from August through October of 1997 and the report was issued on December 12, 1997. The Peer Review Team interviewed approximately one-third of the TQP participants and managers, reviewed TQP procedures and records, and interviewed AL staff responsible for TQP administration. The team visited the Amarillo, Los Alamos and Kirtland Area Offices as well as technical organizations within the Albuquerque site.

## 2. Internal identification and analysis of issues affecting program stakeholders

In August of 1997, AL polled each of the organizations participating in the TQP, requesting their concerns with the current program. Based on these and other concerns, AL established the TQP Recast Working Group. The Recast Working Group, surveyed additional participants and managers, compiling and analyzing their concerns.

## 3. Analysis of the current program's processes

The current AL-TQP process underwent analysis using common reengineering methodology. Processes, activities and steps were identified and operation times were assigned to each. Each activity was then measured against the objectives and desired elements of a revised program. If the activity was deemed "value added," meaning it contributed to the objectives of the recast, or was germane to the quality of the product, it was designated as such. If an activity was not value added, then it has been slated to be modified or eliminated.

As an example, the current Functional Area exemption process, required an estimated 300 hours of federal and contractor support per year, (Participants, Supervisors, QTD processing etc.) at an estimated cost of \$20,400. If the non-value added process was eliminated these resources could be utilized in other areas.

## Section 4.0 Program Strengths

### 4.1 Effective program administration and qualification record control.

The AL-TQP maintains an effective administrative structure. QTD acts as the central point of contact for reporting and storing TQP related data. The Area Offices, and many of the line organizations within AL have individual TQP coordinators which facilitate the program at their site. QTD administratively reports to the Assistant Manager for Management and Administration, and the AL representative to the Federal Technical Capability Panel provides direction of the program with regards to technical training and qualification. This tiered administration of the program has allowed for effective and timely reporting of qualification progress to AL management.

### 4.2 Program implementation complete and requirements of DOE Order 360.1 satisfied.

All of the positions identified during the design phase of the AL-TQP have been incorporated into the program. Each of the positions that initially entered the program have had an Office/Site Specific Qualification Standard developed, exemptions from their Functional Area identified and approved, and almost all of the participants have completed self-assessments against their qualification standards. The process requirements outlined in DOE Order 360.1 *Training*, have been met, and AL has satisfied Headquarters requests for programmatic status reports.

### 4.3 TQP needs are used as an input for the Individual Development Plans (IDP).

The majority of TQP participants have revised their IDPs using input from the TQP. QTD facilitates IDP development and provides most of the AL-TQP participants electronic access to their TQP records. TQP gaps are identified and transferred to the IDP and are included in the annual AL Training Needs Assessment and in turn to the Annual Training Plan. This corporate approach to training allows QTD the opportunity to facilitate a cost effective training program.

### 4.4 Utilization of alternative developmental activities for TQP completion.

Using alternative developmental activities such as self-study guides, video-courses, and computer based training, is one of the AL-TQP's most notable strengths. The AL library, located in the AL Employee Resource Center, is effectively administered, and contains all the available Departmentally sponsored TQP self study materials. The participants have taken advantage of the self study materials to address many of their qualification requirements, and copies of the materials have been made available to the Area Offices. In order to facilitate qualification progress, QTD identifies outstanding critical TQP training requirements, and then attempts to secure developmental opportunities or classroom training to meet the significant training needs.

## **Section 5.0 Program Deficiencies**

### **5.1 Lack of ownership by senior/line management and participants in the program.**

It is a challenge for any organization to develop programs targeted at upgrading the competence of technical staff. Such efforts rarely succeed without strong endorsement, involvement, and guidance by the organization's management. The size and technical diversity of the AL staff complicates both the problem and the solution.

Management initially supported the objectives of the TQP, but due to many issues involved with implementation, (*several are addressed in this document*) the support faded. Participants were also open to the idea of a training and qualification program, but they soon viewed the TQP as a paper exercise. Without management support and participant commitment, the program met with limited success.

Based on interviews with supervisors and review of qualification cards, there are indications that some supervisors signed off their staff's qualifications with minimal rigor. This "rubber stamping" appears to have been the result of the supervisors perception that the TQP is of little value to their staff.

In the past, AL senior management has also been hesitant to truly endorse the program. Early in the implementation of the TQP, management recognized several problems with the program. Failure to address these concerns early resulted in a lack of acceptance by participants and line managers.

### **5.2 Systematic Approach to Training was not adequately followed during implementation of the current program.**

Principles of the Systematic Approach to Training (SAT) were used early in the design of the AL program. QTD technical and non-technical training staff attended SAT training early in 1995, and the SAT method was used to design the program. However, some phases of the approach were not used. Analysis to determine the need for a training and qualification program at AL was not performed. The concerns of the DNFSB and the technical staff deficiencies outlined in the 93-3 Implementation Plan were never validated using an analytical method. Adequate position analyses were rarely performed. After a cursory determination of the general job functions, participants were asked to select from general competency statements, which may or may not have defined the requirement of the position.

Design and development phases of the SAT were also not completely incorporated into the TQP. The purpose and scope of the program was not clearly defined for the AL participants and

supervisors. Qualification standards were issued without adequate guidance on participant evaluation.

The lack of programmatic analysis prevented a baseline of AL's technical capabilities. Without a baseline, effectiveness of the TQP could not be adequately evaluated. Insufficient evaluation, coupled with the inability to change the program based on the evaluation or lessons learned, prevented proper SAT implementation.

### **5.3 Insufficient or inappropriate qualification standards.**

The TQP is currently comprised of a three tiered qualification process, including the General Technical Base (GTB) standard (applies to all participants in the program), Functional Area (FA) standards (applies to all participants within a common work area), and the Office/Facility Specific (OFS) standards (applies to the specific work group or position).

The GTB qualification standard and many of the competency statements from the FA standards has not adequately met the needs of all the current AL participants. Furthermore, TQP participants were required to pick from 23 FA qualification standards which may or may not have clearly identified the requirements of their position.

The OFS qualification standard development process provided participants the opportunity to design a qualification standard that met the requirements of their position. However, the accelerated implementation at AL did not reasonably allow development of appropriate competency statements, and the overwhelming content of the GTB and FA acted as a disincentive to add additional requirements to the OFS. Typical OFS standards are comprised of slightly modified statements taken from various FA standards. This method of OFS development did not supply the level of specificity required to adequately outline the competency requirements of the position.

### **5.4 Less than adequate discipline in the participant evaluation process.**

The AL-TQP evaluation process set forth to date is general at best. The AL-TQP Implementation Procedure can be interpreted as accepting general job proficiency to satisfy specific competency performance demonstration. This interpretation and method has been used by some Qualifying Officials, (*those supervisors and/or subject matter experts designated to evaluate and sign qualification cards*) to qualify participants.

The current TQP Implementation Procedure requires that objective evidence be reviewed prior to approving a participant's equivalencies, however, evidence is not required to be submitted with the qualification card until after the participant has completed all of the qualification requirements. The quantity and quality of evidence used by qualifying officials varied greatly from organization to organization, and some equivalencies were approved without any evidence at all.

Approximately 60% of all the AL qualification standards (GTB/FA/OFSQS) have been completed via the exemption and equivalency processes, about 10% have been satisfied via developmental activities, and 30% are yet to be completed. The large percentage of exemptions and equivalencies suggest that either the AL participants were already qualified prior to the program, or that competencies were signed off with little regard to the actual level of knowledge possessed by the participant. The absence of a consistent evaluation process and corresponding objective evidence to support claimed equivalencies renders the completion percentages suspect.

### **5.5 Lack of certification reciprocity by the current program.**

The DOE specific nature of several of the competency statements in the FA standards makes it difficult to demonstrate a direct link between the knowledge requirements contained in industry recognized certifications, (i.e. Professional Engineer, Certified Safety Professional etc.) and those standards. There has been little or no reciprocity for industry certifications in the AL-TQP. If professional certifications are considered valuable, and they are by most industries, credit for professional certifications will increase the credence and credibility of the current TQP. The current program provides little incentive for participants to earn professional certification in their technical fields.

### **5.6 Non-value added paperwork exists within the current program.**

Several of the forms used in the initial implementation of the TQP were non value added and unnecessary. The large number of signature sheets and other required forms became unmanageable by QTD. The predomination of paper work in the program contributed to some of the supervisors and participants ignoring the requirements.

### **5.7 Ineffective communication.**

Insufficient guidance was provided to the stakeholders during the initial implementation of the program concerning the TQP's, scope, objectives or procedures. The AL Implementation Procedure was not developed until nine months after most of the standards were issued to participants and over a year from the time position analysis began. The late and ineffective communication coupled with lack of management emphasis resulted in participants unaware of the program and its role at AL.

Communication between QTD and Area Offices has also been weak. Qualification document control between the Area Offices and QTD has been inadequate. QTD and Area Office personnel turnover has impacted the relationship between the parties.

### **5.8 Insufficient Human Resources integration into the qualification process.**

The tie between the TQP and Human Resources (HR) was recognized as important since the inception of the current program. However, in implementation, several of the early initiatives to link these two processes together were never realized except on paper. Several records in QTD did not accurately reflect the participant's current position or organization. TQP standards were intended to support the supervisors in writing vacancy announcements, and hiring criteria, but very few vacancy announcements have included qualification program information.

### **5.9 Exclusive focus on defense nuclear facilities resulted in less than adequate attention to other important safety and programmatic capabilities.**

The original intent of the TQP was to establish and certify the competence of DOE employees responsible for technical management, oversight, or operation of defense nuclear facilities. The focus on defense nuclear positions caused significant resources to be spent on TQP related activities, while neglecting other technical training initiatives. Technical training priorities have favored those positions designated as 93-3, even though non 93-3 positions may also have critical ES&H responsibilities as well. A coordination of all the technical training activities, including qualification, is important regardless if the positions are under the preview of the DNFSB.

## Section 6.0 General Recommendation

AL should take the opportunity afforded by the 93-3 implementation recast to improve the TQP at AL. This initiative must identify a means in which the TQP will continue to capitalize on its strengths, and mitigate its deficiencies. A stakeholder based redesign of the AL-TQP will address the concerns associated with management involvement, and program inflexibility. The updated program must allow management, participants and other interested parties to participate in the design and implementation of the program. Utilization of the Systematic Approach to Training methodology will ensure the redesign activities provide for the development of an AL tailored program which will meet the objectives established by the revised 93-3 Implementation Plan.

Streamlining the prescriptive nature of the current program will allow tailored qualification requirements. Ensuring that appropriate competency requirements are included in a single standard will reduce the administrative burden on both supervisors and QTD, and increase the value to the participant. Review of the qualifications standards currently in place, will validate the content of those standards, thus ensuring that credit for previously obtained requirements will be granted where appropriate.

The approach of the redesign should be detailed in a plan outlining; the activities of the revised program, how those activities address each of the issues identified by this report, and timelines for implementation. The endorsement of this plan by the AL Manager, and the Federal Technical Capabilities Panel will demonstrate senior management commitment to this initiative.

## Section 7.0 References

Department of Energy; DOE Handbook 1078-94, Training Program Handbook: A Systematic Approach to Training; DOE, Washington DC; August, 1994

Department of Energy, Human Resources, HR-31; Revised Implementation Plan for Improving DOE Technical Capability in Defense Nuclear Facilities Programs; DOE, Washington DC; February, 1998

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